A

distal end int. side pointed

Rio Hulmenses — muscle tub. lies int to slope of ant. side

flammens — ① broad shallow foramen

② shaft broader & more obliquely rounded (ulnar surf. proximad)

③ Connection of int. tub. to shaft further toward center of bone

④ deltoid ridge less excavated

⑤ shaft merges into more gradually

wilsonianus. ① foramen oblong vertically or round.

② shaft more pointed

③ tube connects further externally leaving center free of bulge

④ deltoid ridge well excavated

⑤ shaft merges into it more abruptly

muscle tub. lies below beginning slope of ant. side

distal end int. side rounded

B

La Brea Carnivora

Tarsus 94.8 – 82.0 (267 specimens)

94's = 4	90's = 36	86's = 27	82's = 2
93's = 9	89's = 39	85's = 20	
92's = 22	88's = 33	84's = 13	
91's = 26	87's = 32	83's = 4	

Caracara

Polyborus cheriway: Tarsus 95.6-91.4 $\frac{13.3-12.9}{14.5-14.2}$;

tibia

Pmm. 110.4-114.9 $\frac{21.5-22.6}{17.5-17.8}$

C

Polyborus thamus: Tarsus 88.3 $\frac{15.6}{15.6}$

tibia

Pmm. 114.9 $\frac{23.4}{18.5}$

Polyborus lutosus: Tarsus

Anseriformes
anseres
Anatidae

Cygninae - Whoopers, Whistling & Trumpeter Swans

Anserinae, Branta, Philacte, Anser, Chen

Dendrocygninae: D. autumnalis, bicolor, viduata (S. Am.)

Anatinae - surface feeding ducks: Anas platyrhynchos, diazi (mexican), rubripes (E), fulvigula (E), Chaulelasmus; Mareca; Dafila; Nettion; Querquedula; Spatula; Aix.

Diving Ducks

Nyrocinae: Nyroca americana, collaris, valisineria, marila, affinis; Glaucionetta (2); Charitonetta

Clangula (Old squaw); Histrionicus (Harlequin);

Camptorhynchus (E); Polysticta (Eider); Somateria (3) Eider

Arctonetta (Eider); Melanitta deglandi, perspicillata

Bidennia (cam. Scoter)
amer.;

Erismaturinae - ruddy & marbled Ducks

Erismatura, Nomonyx (S.C. Amer & Texas)

Merginae - mergansers: Lophodytes (Hooded);

Mergus americanus, serrator.

Ducks

A Mallard ♂: Humerus 95.2 (p. 21.0, d. 15.5); coracoid 50.5; ulna 80.7 (81.0); carpus 58.6; tarsus 44.4 – 47.6 (45.3); femur 51.7 (autumn ♂ 49.0); tibia 82.8 (dist. surf. 8.8) D

A Pintail ♂: Humerus 88.4 (autumn ♂ 91.6) (19.8 p., 13.8 d.); coracoid 46.8 (48.0); ulna 77.5 (80.4); carpus 53.3; tarsus 40.1 – 45.2 (43.3); femur 48.4; tibia 78.1 (dist. 8.7)

N White-winged Scoter Humerus 101.6 (p. 20.9, d. 14.9); coracoid 52.2; carpus 58.2; ulna 91.0 tarsus 51.6; femur 56.4; tibia 96.0 (10.5 dist.)

M Amer. Morgas ♂: Humerus 93.3 (p. 20.5, d. 14.6); coracoid 46.0; ulna 78.8; carpus 57.0; tarsus 49.2; femur 51.7; tibia 87.7 (dist. 10.0)

M Merges serrator ♂: Humerus 87.1 (18.4 p., 12.8 d.); coracoid 56.2; carpus 51.9; tarsus 45.5; femur 46.8; tibia 82.0 (dist. 8.9)
♀ 83. ♀ 50.4 ♀ 49.4 ♀ 43.2 ♀ 44.7 ♀ 77.5

A Marecanas. Baldpate ♂: Humerus 84.4 (17.7 p., 12.8 d.); coracoid 43.1; ulna 71.5 (74.9)
♀ 78.6 ♀ 40.9

carpus 52.1; tarsus 37.5 – 40.7; femur 45.3; tibia 73.2 (dist. 9.5)
♀ 50.4 ♀ 39.8 ♀ 42.1 ♀ 74.2

A Chaulelasmus Gadwall ♀: Humerus 81.6 (17.7 p., 13.3 d.); coracoid 42.6; ulna 70.3 (75.4)
autumn ♀ 85.6 autumn ♀ 43.5

carpus 50.0; tarsus 39.4; femur 43.7 (45.3); tibia 71.6 (dist. 7.1)

N Melanitta Surf Scoter: Humerus 80.2 (17.4 p., 11.8 d.); coracoid 42.5

carpus 47.8; tarsus 41.8; femur 46.6; tibia 78.3 (dist. 8.5)

N Nyroca americ. Redhead ♂: Humerus 87.8 (18.6 p., 13.0 d.); coracoid 47.6; ulna 74.2
♀ 90.5 (78.8)

Carpus 47.6; tarsus 39.4; femur 48.0; tibia 77.3 (dist. 8.6)
♀ 48.6 ♀ 41.0 ♀ 47.1 ♀ 78.3

N. Nyroca maila
Grecht Scaup ♂: 87.0 (18.4 P. 12.4 d.); humerus; coracoid 47.7, ulna 76.5

carpus 47.8; tarsus 38.4; femur 48.1, tibia 77 (dist. 8.8)

N. Nyroca affinis
Lesser Scaup ♂: Humerus 79.1 (16.1 P. 11.3 d.); coracoid 43.2, ulna 69.7

carpus 42.4; tarsus 31.3; femur 41.9; tibia 70.4 (dist. 7.7)

Aythya vallisneria
Shoveller ♂: Humerus 79.8 (16.0 P. 11.8 d.); coracoid 41.4, ulna 64.4
♀ 75.3 ♀ 39.9 ♀

carpus 48.1; tarsus 35.8–38.3; femur 39.2; tibia 68.2 (dist. 7.0)
♀ 45.8 ♀ 36.2 ♀ 39.6 ♀ 66.3

Aythya marila
Scaup ♂: Humerus (16.2 P. 12.0 d.); coracoid 40.3, ulna 67.0 stout

carpus 45.3; tarsus 35.9; femur 41.1; tibia 63.5 (dist. 7.4)

E. Rudis
Erismatura ♀: Humerus 65.9 (13.3 P. 8.5 d.); coracoid 35.

carpus 32.5; tarsus 30.8 stout; femur 38.2; tibia 58.3 (dist. 7.8)

Bucephala albeola
Buffle-head Charitonetta Humerus 56.0 (12.2 P. 8.2 d.); coracoid 30.7, ulna 48.2

carpus 32.8; tarsus 29.1; femur 35; tibia (dist. 6.2)

Clangula hyemalis
Glaucionetta ♀: Humerus (16.3 P.); coracoid 42

Anas boschas
Mallard ♂: Humerus 62.2 (12.9 P. 9.8 d.); coracoid 34.8 ulna 53.3
♀ 58.4 ♀ 32.1 ♀ 49.1

carpus 39.0; tarsus 31; femur 35.4; tibia 57.9 (dist. 5.9)
♀ 37.2 ♀ 30.3 ♀ 32.5 ♀ 55.4

Dafila acuta
Pin-tailed ♂: Humerus 62.2 (13.0 P. 9.8 d.); coracoid 34.7, ulna 53.8

tarsus 31.8; femur 34.7; tibia 59 (dist. 6.0)

Querquedula cyanoptera ♀ Humerus 63.5 (13.1 9.8); coracoid 34.0 ulna 52.9
stout ♀ 59.3 ♀ 32.8 ♀

carpus 37.3 tarsus 31.8 ♀; femur 35.4; tibia 59.2 (dist. 5.8)
36.8 30.3 ♀ 33.6 54.5

Notes on Ducks

Nyroca – dalbaid crest less protruding – edge more straight

Meas. of Teal from Westmere's Florida paper:

♀. discors Linnaeus –

♀	br. tarsi	br. head	br. shoulder
63.4	9.7	13.8	4.7
63.9	10.0	14.0	4.8
61.8	9.2	13.1	4.6

See Teal under T

Mallard vs Pintail tarsus – ratio bt. sight tracks

See under M – Mallard

to br. dist. end. Mallard 11.3% Tuf. Pintail 98–100%

Spatula, Baldpate, Gadwall – tarsi almost identical

35.8–38.3 37.5–40.7 39.4 1st track tends to be square r more stuck out in Baldpate but some Baldpate are like Spatula. Track 3 in Baldpate also tends to be square but again some are like Spatula. Baldpate also tends to have straighter & more defined int. edge prox. ly of shaft. Spatula edge less defined & can see the int. surface prominent. Gadwall appears more like Spatula but too few to be sure. (This shape of shaft goes with greater webbing & reminds one of Aythya. Thus shape of shaft below tubercles in Spatula & Mala in Baldpate. (tendency there)

tarsus

Aix has very short calcaneal ridge (rel. to breadth of same. Black

70.5–78.7% br. in width compared to 53–68% in Baldpate Shoveller

In general Aix is stockier especially Aix sponsa.

See under N for Nyrocinae

Anas: Baldpate vs. Pintail quite similar. The Baldpate tends to be a little smoother & rounder across anconeal surface of prox. part of shaft (like mallard a bit)

E

Falcon

7. mex. vs. 4. pere.

Humerus:

Distal end – ect-epicondyle in mex. lies nearly flat against shaft – stands out slight[ly] in pere.

Proximal end – ant face – median line runs up to connect with muscle scar near median ant prox ly, in mex. – but runs just below this scar (curving toward med. cent) in pere.

Tibia:

External fork of supra tendinal Bridge narrow in pere, broad in mex. But internal muscle scar evident above int. condyle in mex. not so in pere. Ext. edge of shaft from dist. end to head of fibula very sharply pointed in mex. (not so in pere.) 89.9 – 78.8 = pere., 91.45 – 79.1 = mex.

Shorter fibular ridge in pere.

Femur:

Well marked (broad) cut in ant. edge tro. ridge in pere., less distinct in mex. Post. side int. to obturator ridge depressed in mex. not in pere. 72.8 – 62.4 = mex., 72.5 – 62.2 = pere.

Pere more sturdily built.

Ulna:

Certain ant. intermuscular line above nutrient foramen [illegible] very noticeable in mex. and very inconspicuously in pere. Here like just a double line. One edge continuous to imp. of brachialis ant in mex but is farther from it in pere.

Tarsus:- Ant. face prox end depressed next to tib. ant. in mex., not in pere.

Ulna & radius of Falco p. anatum ♀ are larger than Falco mexicanus ♂ tuba is stockier. Impression of Brach. ant. farther removed from intermuscular line in peregrinus also. Gyrfalcon (rusticolus) resembles mex. more in proximity of line to Brach. impression. Little projection onto shaft from edge of ext. art. surface next in rusticolus is absent in peregrinus.

Arabeo

Arch. vs. Col. kohlhoffi – femur

dist. end – tub. above popliteal area joined to ext-condyle by ridge in Col. but not in arch.

pow. end – arch. ext contour plane outward in arch. but recedes slightly inward from lower half in Col. h. partly & fully – the 2 muscle scars are closer together & farther from post. surf. in Arch. than in Col. kohl. and triangular prominent tubercle is posterior to them in Arch. there is a broad dish, less sharply defined in the same area in Col.

Geese

Tarsi: Chen distinguished from all others by presence of "heel", a prominence or ridge running down from external condyle (anterior side). Distally - median trochlea more prominent and ♂ (the significance G is likely this also). Internal edge of prox. end flaring more widely. Ext. prox. - lig. ridge extending distally almost to level of int. calcaneal ridge.

Branta more elongate, externally at prox end than Anser (or Chen, of course) this ridge steps down from condyle instead of being nearly continuous as in Anser. Ext. side of shaft (front view) of Anser roundedout ward.

Corpus:
Small pit above prox. symplesis in Anser & Chen longer groove in Branta.

Distal end - art. facet of II and III separated by distinct well rounded groove in Branta - an extra ridge shows in this groove in Anser, Chen more like Branta. Prox trochlea: edges form sharper angle in Branta than in Anser (post. view)

Geese - Sizes (tarsi) from Brit. Col.

Branta canadensis (3 males)

canadensis 3.7 - 2.45 (♀s smaller yet)
hutchinsi 3.2 - 2.25 (" " " ?)
occidentalis 3.25 - 3.0 (" " " ?)
minima 2.75 - 2.4 (" " " ?)
B. leucopsis 2.3 (" " ")
B. bernicla 2.1 (" " ")
B. nigricans 2.5 - 2.2 (" " " ?)
mod. spec. (2.55)

Anser albifrons 2.5 (♀ smaller) gambeli*

Chen hyperborea 2.25 - 2.8
C. caerulescens 3.3 - 3
C. rossi 3 - 2.3
C. nivalis 3.5 - 3.15

Dendrocygna fulva 2.4 - 2.1
D. dissor 2.25 - 2.2
D. autumnalis 2.7 - 2.3

*Anser a. gambeli sizes from Cary, Bird (males) 3,0; 2.8; 2.85

Measurements (tarsi)

Chen hyperborea - 77.3 - 89.8 mm. (caerulescens 82 - 85.5 ♂♂)

Chen rossi - 63.7 - 75.7 mm.

Chen h. nivalis - 80.0 - 90.8 from Swarth + Bryant

Anser albifrons albifrons 64.0 - 79.0

" " gambeli (skins) 74.7 - 84.0

Philacte - 73.5

Geese - Chen, Branta, Anser

Coracoid

Branta - clavicular facet overhangs shaft with excavation clear across & foramina.

Chen - clavicular facet overhangs at upper end over a deeply excavated area perforated by foramina, Below this, however it merges with the shaft at least a short distance tho it may again overhang at lowermost tip.

The excavated area (underlined above) is well marked almost like the pneumatic depression at the proximal end of the humerus & is deep.

Anser. Clavicular facet has slight overhang toward dorsal part of bone but none below. There are usually foraminal but the dorsal overhang but the area beneath is only slightly depressed & no well marked boundaries to the excavation such as in Chen & may even lap Chen, however in depth of excavation but no extra overhang below.

Humerus - (prox. end)

Branta - sort of wrinkled depressed area just below head not always deeply excavated.

Chen - may seem similar to Branta and an intermuscular line may come across under the head making a sort of squared depressed area but this area lacks the wrinkled effect seen in Branta.

Anser. Area under head "pitted" more in Chen & Branta tho there are some of each that seem to at least approach the other. However, in Anser. The central apex of the shaft or an intermuscular line continues the forms coming across (inward) under (below) head. If it curves at all as in Chen it is very abrupt. It is likely that some Anser & Chen will be indistinguishable but at the ends they appear to be separable.

Humerus, distal:

Branta - facets of entepicondyle large, grooved at top & bulging out below) with a sort of flounce. Muscle pit on side longest coronal suits on median side of int. condyle - no excavation

Chen - facet of entepicondyle narrow & sort of oval. Muscle pit small & deep (usually). Excavation on median side of internal condyle (coronal view).

Anser - sort of Branta & Chen (more so Branta) many be same shape of pointed top & flared below but top never as sharply pointed as Branta.

No excavation on coronal med. side int. condyle

Hawks

(figures above = inches from skin meas. given by Bailey or Brit. cat.)

Buteo borealis: Tarsus 2.4 - 3.8 (88.7 - 80.6); 13.0 - 14.8 / 14.5 - 16.4; Tibia 82.6 - 78.1 / 12.3 - 11.3

femur 87.6-82.3 11.2 - 15.5 / 17.9 - 16.4; hum. 116.3 - 108.5 23.6 - 21.2 / 20.5 - 18.2 ulna

carpus ; coracoid

Buteo regalis: tarsus 4.3 guinea borealis? 29.3 (94.8 - 81.4); 13.6 - 16.2 / 14.5 - 18.1; Tibia 13.3 - 15.6 / 12.9 - 12.3

femur 95.3-88.5 19.1 - 16.2 / 20.0 - 17.0; hum. 128.8 - 117.0 26.2 - 22.1 / 21.9 - 19.4; ulna

carpus ; cor a.

Buteo swainsoni: Tarsus 2.3 - 3.1 (78.6 - 65.8); 12.8 - 11.4 / 14.2 - 11.8; Tibia 10.3 - 12.0 / 10.9 - 12.1

femur 76.5-70.5 15.5 - 15.2 / 16.8 - 13.9; hum. 116.2 - 104.1 22.1 - 19.9 / 19.0 - 17.7 ulna

carpus ; cora.

Buteo lineatus: Tarsus 2.9 - 3.1 (77.4 - 78.1); 10.4 / 11.7; Tibia 91.2 9.7 / 9.6

femur 66.4-67.4 ; hum. 85.3-81.8 16.3 / 14.7 ulna

carpus ; cor.

Buteo lagopus: Tarsus 2.8 - 3.1 67.4 12.8 / 14.5; Tibia 78.6 12.8 / 12.3

femur ; hum. 112.6 23.3 / 19.4 ulna

carpus ; coracoid

Buteo albonotatus; Tarsus 2.4 - 2.8 - 3.0 ;

Pandion haliaetus; Tarsus 3.8

2.9 - 3.1

Accipiter cirrocephalus: tarsus 75.6

femur 84.8 humerus ulna

carpus coracoid 47.7

Circus spilonotus: tarsus 81.2 - 71.6

3.4 - 3.7

Buteo albicaudatus: tarsus

2.35 - 2.6

Buteo platypterus: tarsus

7.5

Asturina nuficauda: tarsus ; tibia 79.4 - 79.8 -

femur 52.9 - 58.4 humerus 64.6 - 66.1 ulna 71.9 - 73.9 +

carpus coracoid 26.4 - 28.1

2.85

Asturina plagiata: tarsus ; tibia 85.2 - 93.1

femur 54.3 - 67.1 humerus 65.3 - 81.7 ulna

carpus coracoid 27.8 - 33.9

3.9

Urubitinga urubitinga: tarsus ; tibia ♀ 110.6

femur ♀ 76.8 humerus ♀ 111.5 ulna ♀ 129.2

carpus coracoid ♀ 41.2

J

K

	Mallard 50.	Pintail
Tarsus - length	44.4 - 47.6	40.1 - 45.0

Mallard generally heavier - Br. of sh. averages broader. Thos of's (Shorter Bones) of Pintail have relatively as great breadth in some cases

Ht of trochl. rel dist. end average greater in Mallard
% turned around dist. end & Ht of trochl.
Mallard 89.1 - 92.1 Pintail 93.1 - 100.0
Thus Pintail has greater br. dist. end rel to Ht. troch. or in other words Mallard has higher trochlea rel. to dist. end br.
Depth of trochlea (3) is greater in Mallard (rel. to dist. end) 63.9 - 67.3 % (Pintail - 59.5 - 63.6 %)

	Mallard	Pintail
Humerus - length	89.0 - 95.3	83.8 - 94.7
Ratio br. dist end to length	15.8 - 16.4	14.6 - 15.9
Ratio br. prox. end to length	22.0 - 23.4	20.1 - 21.6
" Ht " " "	22.0 - 23.2	20.4 - 21.6

Mallard more smoothly rounded (anconeal side prox end sh.) Pintail has more marked apex & slight - like a longitud. ridge.

"has small depression adjacent to ~~pectoral~~ in pneumatic fossa" M
Internal trabeculae in Mallard more gradually sigmoid so as to make it seem larger than Pintail - int. edge fairly straight rather than sloped in".

Nyssa

Nyssa [illegible]

valdisineria 42.3 - 43.4

aquatica 37.7 - 41.1

marita 38.1 - 40.1 mire slender (slightly flaring apex, striate) looks constricted especially in mid. stone middle.

N

P

capital groove deeper from palmar side
widens more distally in Oreortyx than
in Callip.
Quad
lig attachment with deeper niche at outer edge in Callipepla than Lophortyx or Oreortyx

Oreortyx vs. Callipepla - humerus

① distal end Callipepla more incurved externally just above epicondyle

② proximal muscle scar nearer pneumatic foramen in Callipepla

③ int contour distally straighter in C., more cut back in Oreortyx

④ muscle scar on ext. edge (anconal) of deltoid prominent ridge - likewise Callipepla O vs C. campus

① N crack more deeply cut & U-shaped in Oreortyx

② metacarpal tuberosity broader & heavier & pointed in Callipepla.

Q

humerus Lophortyx - distal end
brach. ant. scar deeply depressed
well formed but
in Lophortyx, less so but scar in evidence
deepened
well formed in Oreortyx; also but little depressed in
Callipepla & in addition is not so evenly formed
pneumatic foramen under head
left ligament in Lophortyx & top narrow
widening below in Oreortyx; intermediate in Callip.
one

coracoid

Head in ventral view.

① Callipepla, thick and stubby in area of humeral facet then excavated between head and humeral facet

② Oreortyx - area of furc. facet slants off to the ext. side then still more excavated between it + humeral facet. Vent. edge of furc. facet extends inward in hook-like point

③ Lophortyx - more like Callipepla than Oreortyx in stubbiness but furc. facet area extends farther externally + there is less excavation between this facet + the humeral facet

Furcular facet

① Callipepla - thick + large triangular

② Oreortyx - thin, under broken-marked concave

③ Lophortyx shorter + broader even than Callipepla, smooth, slightly depressed area passes like a band across the front of the facet facing out as it goes over the crown of the head

R

Shore birds

Scolopacidae

Capella (Snipe) Humerus 36.3, pectoral attachment long & blended into shaft

Numenius arquat. Humerus , pectoral attach. high & distinct.

Phaeopus, humerus 34.1, pect. attach high & distinct

Totanus melanoleucus humerus 51.4, pect. attach intermed. no definite line to edge of crest

Catoptrophorus, humerus 62.1. pect. attch long & fairly distinct

Heterocelus - see next page thighs, and humerus distinct
Thaus Catoptrophorus

Crocethia alba (Sanderling) humerus 32.3. Pectoral attach. long & almost blends into shaft

Pelidna alpina humerus 29.1. pect. attach, fairly long, fairly distinct

Limnodromus (Dowitcher) humerus?

S

Charadriidae

Squatarola, humerus 54.9, pectoral attach. high & distinct

Pluvialis (Golden Plover) humerus 45.6 pect. attach high & distinct

Oxyechus (Killdeer) humerus 39.7, pect. attach, high & very distinct - narrow

Heteroscelus (Tattler) humerus 42.4 pect. attach high, distinct but less markedly so than Oxyechus & line & edge of crest less sharp and & broader (belongs in Scolopacidae)

Arenaria melanocephala (Bl. Turnstone) humerus 40.4, pect. attach long & inturned, (similar to Aramus). Bottle with air in pneumatic fossa

Arenaria interpres (Ruddy Turnstone) 37.0, chars. same tho pect. scar a bit more prominent with line running to crest

Recurvirostridae

Himantopus, humerus 54.1, 55.5 pect. arch high & prominent with narrow line to crest (similar to Oxyechus). Bottle with air in pneumatic fossa.

Aramus.

Phalacrocoracidae

Phalacrocorax pelicanus humerus 33.8, pect. arch long, curved & nearly obscuring. Bone very long & slender & pn.

Leptopus - smaller but also slender

No distinction in facial except discoloration
scars [illegible] (maybe because I am
Pt. is ♂)

Humerus – Deltoid ent anconal ends
olecranal fossa grooved transversely
in Nettion but not Querquedula
prox. end, above internal tuberosity
(prox. surf. of same) more markedly
excavated in Querquedula than
in Nettion

Ulna – external (prox.) facet drops down
to a "teardrop" point demarcated
slightly from facet proper – in Querquedula
more clipped off in Nettion not extending
down to a point.

Humerus Q, cyan. ♂ – Nettion
Deltoid ent line borders bicipital surface
and forms more acute angle with
the bicip. ent (Querq) than the more
faintly marked line in Nettion (this faint
line rounds more broadly into the ent)
Pectoral is close to Nettion but from head to
midline next to deltoid the area is more convex
in Nettion it is well depressed

T.

Humerus cont'd Q. cyan and Nestron both have more distinct crest & anconal side of shaft near prox end than has dwins and the scar for the post. lat. dors (most prox of the 2 muscle lines) is external to the crest. These chars. are more characteristic of Nestron than Q. cyan. and

Q cyan. head and anconally usually has a crescent ridge below head which goes across to int. crest as in Neds. If it is not marked right under the head that part is usually excavated under the head. These chars. do not apply to bricors in which the area is evenly, broadly rounded

Nestron tends to depression of this area bounded by angulen crest of shaft described above. This crest tend to curve more toward center of bone in Q. cyan rather than out toward pectoral attach as in Nestron. This can always be trusted in cyan humeri.

Carpometacarpus - Teals vs Chaitonetta & Erismatura.

Teals stockier, with higher distal symplysis and more bowed M 3 than the others. Chaitonetta & Erismatura are about of a size but the former has a more prominent process of M1 (projects well out while ruddy slopes downwardly for facet of M1. M 3 slightly more bowed in Erismatura than Chaitonetta & has a small papilla at its upper end on internal side (Not right at the edge however - there may be anything protuberance on the edge in chaits.)

Elements for dictionary

Innominate	Scapula
Femur	Humerus
Tibia	Ulna
Fibula	Radius
5 Metatarsals	5 Metacarpals

8/26/42

Mammal bones for dictionary

M 634 - Scapanus latimanus (no pelvis)
M 1324 - Eumops p. calif. - whole pelvis
M 1065 - Antrozous pallidus
M 1104 = Ursus americanus
M 526 = Canis latrans ochropus
M 739 - Vulpes macrotis (whole pelvis)
M 1195 - Urocyon c. calif. (" ")
M 437 - Bassariscus a. raptor except pelvis (cinnom. = M 1291)
M 1101 - Procyon lotor M 1525 metapodials; M 1205 girdles
M 1169 - Mustela f. latirostra (no metapodials or girdles)
M 1190 - Mustela arizonensis - no metapodials
M 1243 - Mustela vison - no metapodials, ulna or radius
M 1130 - Taxidea taxus neglecta -
M 1070 - Enhydra lutris - No metapodial
M 1474 - Felis concolor calif. - whole pelvis
M 1341 - Lynx rufus calif - ~~whole pelvis~~
M 1305 - Felis domesticus - whole pelvis
M 1318 - Zalophus calif. - (metapodials from M 658) specimen had no metapodials (number (not all rt.))
M 1114 - Arctocephalus townsendi - no metapodials
M 1332 - Onychomys leucogaster ruidosae - no metapodials
M 1262 - " Tonidus tularensis - " "

(humerus + scapula M1313)

M1514 - Reithrodontomys halicoetes - no metapodiale

M1276 - Reithrodontomys m. megalotis - no metapodiales

M1094 - Peromyscus e. eremicus - " "

M1272 - Peromyscus m. gambeli " "

M1513 - Peromyscus b. boylii " "

M1524 - Peromyscus truei gilberti " "

M1092 - Peromyscus crinitus stephensi " "

M1085 - Neotoma desertorum lepidalepida " "

M492 - Neotoma (fuscipes ? macrotis) " "

M1328 - Microtus calif. sierrae " "

M1523 - Microtus calif. aestuarinus " " (no guides)

M1355 - Microtus m. mordax " " —

M1140 - Ondatra z. osoyoosensis " " or pelvis

M837 - Rattus norvegicus " " —

M1516 - Mus musculus (innominate M1313) no metapodiale - no pelvis

M1125 - Thomomys b. bottae no metapodiale - whole pelvis

M642 - Thomomys b. pallidus " " " "

M1344 Geomys sagittalis " " " "

M1059 - Perognathus l. pacificus? no metapodiale (thumerus P.p. magnimontanus M1180)

M1212 - Perognathus parvus mollipilosus - no metapodiale or humerus

M1093 - Perognathus penic. angustirostris - no metapodiales

M1294 - Perognathus calif. distans " "

M906 - Dipodomys mohavensis – no metapodial

M1339 - Dipodomys ordii " "

M944 - Dipodomys merriami " "

M1167 - Dipodomys deserti " "

M1345 - Dipodomys agilis " "

M1217 - Dipodomys spectabilis with metapodials

M1356 - Microdipodops megacephalus dickeyi - no metapodials

M1357 - Liomys irroratus texensis – " "

M1188 - Zapus trinotatus " "

M1323 - Erethizon e. epixanthum ——

M1192 - Aplodontia rufa rufa no metapodials

M1176 - Marmota f. fortirostris – " "

M1071 - Citellus b. fisheri - with metapodials

M1060 - Citellus mohavensis - femur, humerus, scap. Citellus only
1 scap. no M1205

M1207 - Citellus t. tereticaudus " no scapula - metapodials OK

M1199 - Citellus annulatus Mex. – no metapodials

M1331 - Citellus spilosoma Texas annectens - no scapula

M1380. Callospermophilus chrysodeirus - OK

M1319 - Citellus Spermophilus lateralis lateralis - OK

M1181 - Eutamias minimus scutatus - no metapodials

M1210 - Sciurus douglasi albolimbatus - " "

M1180 Sciurus griseus anthonyi - no metapodial
M1250 sciurus - scapula T fibula
M 1245. ~~Sciurus~~ Glaucomys sabrinus calif. - no metapodials, o scap o fibula
M1216. Cynomys ludovicianus - " " ——
M1171 Cynomys gunnisoni zuniensis - no metapodial
M659 Castor - spa. ox
M1185. Ochotona schisticeps sheltoni - no metapodials
M1251 - Lepus alleni - 1 humerus, tibia, fibula, ulna, radius
M 910 = metapodial
M1148 - Lepus c. deserticola - no metapodials
M1163 - Sylvilagus a. sanctidiegi - innominate pelvis
no metapodials
M1177 - Sylvilagus nuttalli grangeri - no metapodials
M1126 - Sylvilagus bachmani ox
M 8240 - Canis nannodes - ex cept pelvis = M528
M604 - Odocoileus virginianus - ox
M1248 - Odocoileus hemionus calif. - ox (whole pelvis
M760 - Antilocapra amer. - no metapodials or ulnae
M500 - Alces gigas - ox
M631 - Rangifer caribou no pelvis
M1255 - Dipodomys deserti - tib., humerus, radius, pelvis only
M619 - Ovis dalli dalli - no pelvis
M618 - Oreamnos montanus - ox
M495. Dasypus novemcinctus - metapodials inc.

M 1435 - Equus caballus (arabian)

M615 - Pecari angulatus ~~whole~~ & left digit #4 foot (hind & fore)

M603 - Nasua narica - whole pelvis

M673 Canis familiaris (" ")

V

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